

**ABSTRACT**

The present invention relates to proteins belonging to a novel class of proteins designated as  $\beta$ -expansins, a composition comprising such proteins, isolated polynucleotides encoding  $\beta$ -expansins, methods for using the polynucleotides and proteins of the invention and methods for identifying, isolating and purifying expansins, including  $\alpha$  and  $\beta$ -expansins. Beta-expansins of the invention have the property of altering physical properties of a plant cell wall, such as for example by loosening or expanding plant cell walls.